

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Arthur L. Cleary et al.
Application No. : 10/057,797
Filed : 29 October 2001
For : PRINTING SYSTEM WITH VACUUM TABLE
Group Art Unit : 3654
Examiner : SCOTT J. HAUGLAND

Mail Stop Amendment
Commissioner for Patents
P.O. BOX 1450
Alexandria, VA 22313-1450

REPLY TO OFFICE ACTION

Sir:

Applicants reply to the 30 December 2005 Office Action. Please amend the application as follows:

Claim Amendments

Applicants have amended claims 21 and 23. Applicants set forth below a complete listing of the claims with the corresponding status indicated for each claim.

1. (Cancelled)
2. (Previously Presented) The apparatus of claim 21, wherein the desired vacuum is maintained in the range from about -0.05 psi to about -0.3 psi.
3. (Previously Presented) The apparatus of claim 21, wherein the vacuum table is coupled to a motor which generates a vacuum.
4. (Original) The apparatus of claim 3, wherein the motor is coupled to a CPU which instructs the motor as to the amount of vacuum to generate.
5. (Original) The apparatus of claim 3, wherein the vacuum table is coupled to a vacuum sensor which detects the vacuum provided by the vacuum table.
6. (Original) The apparatus of claim 5, wherein the vacuum sensor and the motor are coupled to a CPU which receives vacuum information from the sensor and sends instructions to the motor.
7. (Previously Presented) The apparatus of claim 21, wherein the transport belt is made from woven polyester.
8. (Previously Presented) The apparatus of claim 21, wherein the transport belt is made from a reinforced polyurethane material.
9. (Original) The apparatus of claim 7, wherein the transport belt has a thickness of about 0.09 inch.

10. (Previously Presented) The apparatus of claim 21, wherein the holes of the transport belt are spaced apart by about 1 inch.
11. (Previously Presented) The apparatus of claim 21, wherein the holes of the transport belt have a diameter of about 0.1 inch.
12. (Previously Presented) The apparatus of claim 21, wherein the transport belt is made from stainless steel.
13. (Original) The apparatus of claim 12, wherein the thickness of the transport belt is about 0.008 inch.
14. (Previously Presented) The apparatus of claim 21, wherein the porous sheet is made of sintered, porous polyethylene.
15. (Original) The apparatus of claim 14, wherein the porous sheet has a thickness of about 0.5 inch.
16. (Cancelled)
17. (Previously Presented) The method of claim 23, wherein the desired level of vacuum is maintained from about -0.05 psi to about -0.3 psi.
18. (Cancelled)
19. (Previously Presented) The method of claim 23, wherein the porous sheet acts as a flow restrictor.
20. (Previously Presented) The method of claim 23, wherein the porous sheet distributes the vacuum over a region of the transport belt.

21. (Currently Amended) An apparatus for transporting a substrate through a printing system, the apparatus comprising:

a vacuum table that comprises a substantially flat top surface and a plurality of holes, each hole comprising a ~~contiguous~~ sidewall that extends to and is substantially perpendicular to the top surface and is in fluid communication with a vacuum source located within the vacuum table;

a moveable transport belt disposed above the top surface of the vacuum table, the transport belt comprising a plurality of holes extending through a thickness of the belt; and

a substantially flat porous sheet disposed between the top surface of the vacuum table and the transport belt, wherein the vacuum generated by the vacuum table creates a suction on a substrate placed on the transport belt, and the porous sheet restricts fluid flow between the table and the transport belt.

22. (Previously Presented) The apparatus of Claim 21, further comprising an indicator that detects the thickness of the substrate as the substrate moves through the printing system.

23. (Currently Amended) A method for transporting a substrate in a printing system, the method comprising:

generating a vacuum with a vacuum table, the vacuum table comprising a substantially flat top surface and a plurality of holes, each hole comprising a ~~contiguous~~ sidewall that extends to and is substantially perpendicular to the top surface and is in fluid communication with a vacuum source located within the vacuum table;

transporting the substrate over the top surface of the vacuum table using a transport belt that is disposed above the top surface and that comprises a plurality of holes extending through a thickness of the belt;

disposing a substantially flat porous sheet between the top surface of the vacuum table and the transport belt, wherein the vacuum generated by the vacuum table creates a suction on the substrate and the porous sheet restricts fluid flow between the table and the transport belt; and

maintaining the vacuum at a desired level as the area of the transport belt covered by the substrate varies as the substrate is transported through the printing system.

24. (Previously Presented) The method of Claim 23, further comprising detecting the thickness of the substrate as the substrate moves through the printing system.